

# Visualizing and Predicting Heart Diseases with an Interactive Dashboard

Date	15 September 2022
Team ID	PNT2022TMID19891
Project Name	Visualizing and Predicting Heart Diseases with an Interactive Dashboard

# Exploration Of Max Heart Rate During The Chest Pain

## Maximum Heart Beat Achieved during Chest Pain

Here we are plotting the average Max Heartbeats recorded for a person based on Gender and Chest Pain Type. For adults, the maximum predicted heart rate is 220 minus your age. So, if you're 40 years old, the maximum predicted heart rate is  $220 - 40 = 180$ . For diagnostic treadmill testing, some doctors try to achieve about 85 percent of the predicted maximum heart rate.

**For moderate-intensity physical activity**, your target heart rate should be between 64% and 76% of your maximum heart rate. You can estimate your maximum heart rate based on your age. To estimate your maximum age-related heart rate, subtract your age from 220.

For example, for a 50-year-old person, the estimated maximum age-related heart rate would be calculated as

$$220 - 50 \text{ years} = 170 \text{ beats per minute (bpm)}.$$

The 64% and 76% levels would be:

$$64\% \text{ level: } 170 \times 0.64 = 109 \text{ bpm, and}$$

$$76\% \text{ level: } 170 \times 0.76 = 129 \text{ bpm}$$

This shows that moderate-intensity physical activity for a 50-year-old person will require that the heart rate remains between 109 and 129 bpm during physical activity.

**For vigorous-intensity physical activity**, your target heart rate should be between 77% and 93% of your maximum heart rate. To figure out this range, follow the same formula used above, except change “64 and 76%” to “77 and 93%”.

For example, for a 35-year-old person, the estimated maximum age-related heart rate would be calculated as

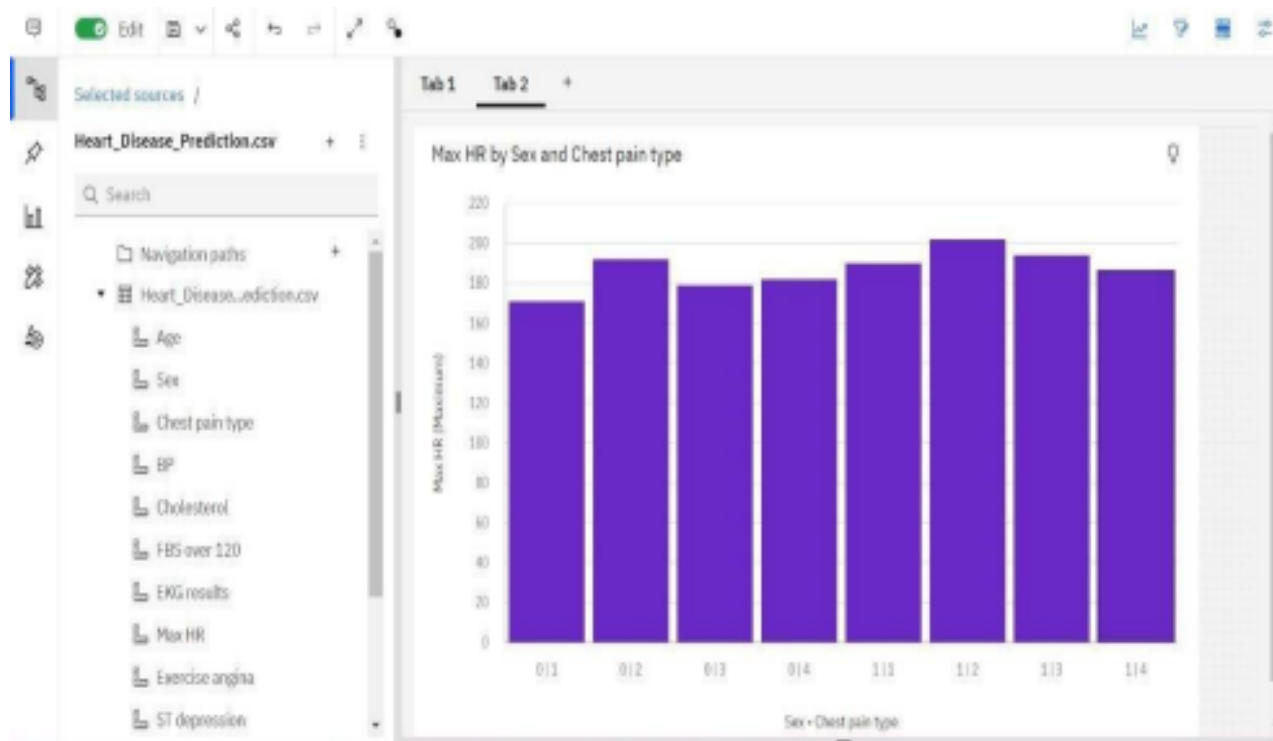
220–35 years = 185 beats per minute (bpm).

The 77% and 93% levels would be:

77% level:  $185 \times 0.77 = 142$  bpm, and

93% level:  $185 \times 0.93 = 172$  bpm

This shows that vigorous-intensity physical activity for a 35-year-old person will require that the heart rate remains between 142 and 172 bpm during physical activity.



# Maximum and target heart rates:

<b>Age</b> (Years Old)	<b>Target Heart Rate Zone,</b> 50-85%	<b>Average Maximum Heart Rate,</b> 100%
20	100-170 bpm	200 bpm
30	95-162 bpm	190 bpm
35	93-157 bpm	185 bpm
40	90-153 bpm	180 bpm
45	88-149 bpm	175 bpm
50	85-145 bpm	170 bpm
55	83-140 bpm	165 bpm
60	80-136 bpm	160 bpm
65	78-132 bpm	155 bpm
70	75-128 bpm	150 bpm